

AMENDED IN SENATE APRIL 10, 2013

AMENDED IN SENATE FEBRUARY 15, 2013

SENATE BILL

No. 34

Introduced by Senator ~~Rubio~~ Calderon

December 3, 2012

An act to amend Section 659 of the Civil Code, to amend Section 51010.5 of the Government Code, to add Section 38572 to the Health and Safety Code, and to add Section 3239 to the Public Resources Code, relating to greenhouse gas, and declaring the urgency thereof, to take effect immediately.

LEGISLATIVE COUNSEL'S DIGEST

SB 34, as amended, ~~Rubio~~ *Calderon*. Greenhouse gas: carbon capture and storage.

(1) Existing law requires the Division of Oil, Gas, and Geothermal Resources of the Department of Conservation to regulate the construction and operation of oil, gas, and geothermal wells. Pursuant to existing federal law, the federal Underground Injection Control (UIC) program, the United States Environmental Protection Agency delegated responsibility to the division to regulate class II wells, which are wells that use injections for, among other things, enhanced recovery of oil or natural gas. The federal UIC program implements regulations that apply to class VI wells, which include wells used for geologic sequestration of carbon dioxide under specific circumstances.

This bill, upon the adoption by the State Air Resources Board of a final methodology for carbon capture and storage projects seeking to demonstrate geologic sequestration of greenhouse gases, specifically would require the division to regulate carbon dioxide enhanced oil

recovery projects that seek to demonstrate carbon sequestration under various laws providing for the reduction of greenhouse gas emissions.

(2) The California Global Warming Solutions Act of 2006 requires the State Air Resources Board to establish regulations to achieve specified greenhouse gas emissions reduction goals. The act authorizes the state board to include market-based compliance mechanisms in achieving those reduction goals.

This bill would require the state board, by January 1, 2016, to adopt a final methodology for carbon capture and storage projects seeking to demonstrate sequestration under various laws providing for the reduction of greenhouse gas emissions.

(3) The Elder California Pipeline Safety Act of 1981 vests the State Fire Marshal with the exclusive safety regulatory and enforcement authority over intrastate hazardous liquid pipelines and, to the extent authorized by an agreement between the State Fire Marshal and the United States Department of Transportation, interstate hazardous liquid pipelines.

This bill would additionally vest the State Fire Marshal with the exclusive safety regulatory and enforcement authority over pipelines transporting a fluid consisting of more than 90% carbon dioxide compressed to a supercritical state.

(4) Existing law defines land as the material of the earth and includes free or occupied space for an indefinite upward or downward distance for the purpose of prescribing ownership of land.

This bill would specify that free space includes pore space that can be possessed and used for the storage of greenhouse gas.

(5) This bill would declare that it is to take effect immediately as an urgency statute.

Vote: $\frac{2}{3}$. Appropriation: no. Fiscal committee: yes.
State-mandated local program: no.

The people of the State of California do enact as follows:

1 SECTION 1. This measure shall be known and may be cited
2 as the Carbon Capture and Storage Act of 2013.

3 SEC. 2. (a) The Legislature finds and declares all of the
4 following:

5 (1) California has established stringent short-term and long-term
6 greenhouse gas (GHG) reduction goals that are functionally similar
7 to the federal and international emission reduction goals. Executive

Order S-3-05 committed California to reduce the GHG emissions to year 2000 levels by 2010 and to year 1990 levels by 2020, and to 80 percent below the year 1990 levels by 2050, a level consistent with the current scientific evidence regarding emission reductions needed to stabilize the climate. The California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code) separately obligates California to reduce GHG emissions to the year 1990 levels by 2020.

(2) The scoping plan adopted pursuant to the California Global Warming Solutions Act of 2006 recognizes that carbon capture and storage (CCS) can play a role in helping the state meet its long-term GHG reduction goals. Cap-and-trade programs worldwide, including the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UN Doc. FCCC/CP/1997/7/Add.1, 37 ILM 22) and the European Union Emissions Trading Scheme (Directive 2003/87/EC, as amended), include CCS as a means for compliance. The 2010 Cancun Agreements under the Kyoto Protocol (UN Doc. FCCC/CP/2010/7/Add.1) envision that CCS will be able to generate certified emissions reductions (CERs) under the clean development mechanism (CDM). The 2011 Durban Platform under the Kyoto Protocol (UN Doc. FCCC/CP/2011/L.10) provides modalities and procedures regarding specifically how CCS projects may generate CERs under the CDM.

(3) The geologic storage of carbon dioxide is expected to provide an effective means of storing carbon dioxide over geologic time periods. The Intergovernmental Panel on Climate Change (IPCC), in its 2005 Special Report on Carbon Dioxide Capture and Storage, states that “[o]bservations from engineered and natural analogues as well as models suggest that the fraction retained in appropriately selected and managed geological reservoirs is very likely to exceed 99 percent over 100 years and is likely to exceed 99 percent over 1,000 years.”

(4) The deployment of CCS can materially help California to achieve its long-term GHG ~~emission~~ *emissions* reduction goals. The International Energy Agency’s 2011 World Energy Outlook describes CCS as a “key abatement option” that accounts for 18 percent of emission savings in a key modeled scenario. The International Energy Agency further reports that CCS investment

1 must be made “now” if emission reductions are to be achieved
2 economically. The August 2010 report of the President’s
3 Interagency Task Force on CCS describes the technology as one
4 that can “greatly reduce” GHG emissions while playing an
5 “important role in achieving national and global” GHG reduction
6 goals. In its December 2010 report, the California Carbon Capture
7 and Storage Review Panel states that “[t]here is a public benefit
8 from long-term geologic storage of [carbon dioxide] as a strategy
9 for reducing GHG emissions to the atmosphere as required by
10 California laws and policies.”

11 (5) Despite the existence of comprehensive federal CCS
12 regulations, impediments to the deployment of CCS technology
13 in California remain, including specific gaps in California laws
14 and regulation. Many of these gaps are identified and discussed
15 by the California Carbon Capture and Storage Review Panel’s
16 December 2010 report. These gaps include clarifying ownership
17 of the pore space and clarifying regulatory responsibility for
18 permitting CCS projects.

19 (6) By exercising a leadership role in CCS technology,
20 California will position its economy, technology centers, financial
21 institutions, and businesses to benefit from efforts to reduce
22 emissions of GHGs through CCS.

23 (7) California has ample geologic storage capacity for carbon
24 dioxide. In a 2005 report, the United States Department of Energy
25 determined that the state has a “huge potential for geological
26 sequestration capacity.” The study estimated that the saline
27 formations have a storage capacity of 146 to 840 gigatons of carbon
28 dioxide. Moreover, those formations also have large numbers of
29 oil and gas fields and significant potential for carbon dioxide
30 enhanced oil recovery (CO2-EOR). The CO2-EOR technology is
31 a proven mature technology that can be used to sequester carbon
32 dioxide given adequate regulatory oversight.

33 (8) In another 2005 study, the United States Department of
34 Energy documented the potential energy production and GHG
35 storage potential of CO2-EOR technology for California. That
36 study reached several conclusions, including California has a large
37 “stranded oil” resource base that will be left in the ground
38 following the use of today’s oil recovery practices, much of
39 California’s large “stranded oil” resource base is amenable to
40 CO2-EOR, application of miscible and immiscible CO2-EOR

1 would enable a significant portion of the California’s “stranded
2 oil” to be recovered, and the successful introduction and wide scale
3 use of CO₂-EOR in California would stimulate the economy,
4 provide new higher paying jobs, and lead to higher tax revenues
5 for the state.

6 (9) Carbon dioxide capture is subject to federal regulations. The
7 United States Environmental Protection Agency (USEPA) regulates
8 air emissions of GHGs through several regulatory programs,
9 including the Prevention of Significant Deterioration (PSD) and
10 Title V permitting programs under the federal Clean Air Act (42
11 U.S.C. Sec. 7401 et seq.). The USEPA’s PSD and Title V
12 Permitting Guidance for Greenhouse Gases states that permit
13 writers must consider CCS technology to be “available” as part of
14 the five-step Best Available Control Technology assessment
15 process. Subpart PP (commencing with Section 98.420) of, subpart
16 RR (commencing with Section 98.440) of, and subpart UU
17 (commencing with Section 98.470) of, Part 98 of Title 40 of the
18 Code of Federal Regulations prescribing GHG reporting rules
19 separately require companies engaged in the injection of carbon
20 dioxide, geological sequestration of carbon dioxide, or other
21 CCS-related operations to report their atmospheric emission of
22 GHGs. These regulations apply in California.

23 (10) Carbon dioxide transport is subject to comprehensive
24 federal regulation by all modes, including pipeline, road, or ground.
25 These regulations apply in California.

26 (11) The pipeline transport of carbon dioxide is a proven mature
27 technology. In its 2005 special report of CCS, the IPCC states that
28 the “[p]ipeline transport of [carbon dioxide] operates as a mature
29 market technology (in the [United States], over 2,500 [kilometers]
30 of pipelines transport more than 40 [million metric tons of carbon
31 dioxide] per year).” Federal government data demonstrate that
32 carbon dioxide pipelines have been operated safely. Meanwhile,
33 the trucking industry has safely transported significant quantities
34 of carbon dioxide for decades for a variety of commercial end
35 users, including the carbonated beverage industry.

36 (12) Carbon dioxide injection and storage is subject to extensive
37 federal regulations. In December 2010, the USEPA finalized its
38 class VI regulations (76 Fed. Reg. 56982) under the Underground
39 Injection Control (UIC) program, and since that time the USEPA
40 has issued several detailed implementation guidance documents.

Those regulations do not apply unless carbon dioxide is being injected for the primary purpose of long-term storage into an oil and gas reservoir and there is an increased risk to underground sources of drinking water compared to class II operations. The UIC class VI well program regulations apply in California and are implemented by the USEPA. The UIC class II well program regulations apply in California and the USEPA has delegated its implementation responsibilities to the Division of Oil, Gas, and Geothermal Resources of the Department of Conservation.

(13) The goals of creating a regulatory framework that ensures the safe deployment of CCS technology in a manner consistent with the state's goals for GHG reduction can best be accomplished by clarifying the ownership of the pore space and the regulatory responsibility of permitting CCS projects.

(b) It is the intent of the Legislature to create a clear and comprehensive permitting regime for CCS projects in California.

(c) In enacting this act, the Legislature does not intend to require the deployment of CCS technology but only to provide a clear and certain regulatory structure for CCS projects.

(d) In enacting this act, the Legislature intends to clarify the Division of Oil, Gas, and Geothermal Resources' authority to regulate carbon dioxide injection for enhanced oil recovery projects, the State Fire Marshal's authority to regulate carbon dioxide intrastate pipelines, that free space includes pore space that can be possessed and used for the storage of greenhouse gas, and that the remaining provision of this measure applies to CCS projects and carbon dioxide enhanced oil recovery projects seeking to reduce a compliance obligation pursuant to the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code) by demonstrating simultaneous sequestration of injected carbon dioxide. The Legislature does not intend to limit or supersede the division's authority as it relates to existing or future carbon dioxide enhanced oil recovery projects that do not seek to reduce a compliance obligation pursuant to the California Global Warming Solutions Act of 2006.

SEC. 3. Section 659 of the Civil Code is amended to read:

659. (a) Land is the material of the earth, whatever may be the ingredients of which it is composed, whether soil, rock, or other substance, and includes free or occupied space for an

1 indefinite distance upwards as well as downwards, subject to
2 limitations upon the use of airspace imposed, and rights in the use
3 of airspace granted, by law.

4 (b) (1) The free space specified in subdivision (a) includes pore
5 space that can be possessed and used for the storage of greenhouse
6 gas in the state.

7 (2) This subdivision does not change or alter the law as it relates
8 to the rights belonging to, and the dominance of, the mineral estate,
9 and does not change or alter the incidents of ownership or other
10 rights of the owners of the mineral estate, including the right to
11 mine, drill, complete, or abandon a well, the right to inject
12 substances to facilitate production, the right to implement enhanced
13 recovery for the purposes of recovery of oil, gas, or other minerals,
14 or the dominance of the mineral estate.

15 SEC. 4. Section 51010.5 of the Government Code is amended
16 to read:

17 51010.5. As used in this chapter, the following definitions
18 apply:

19 (a) “Pipeline” includes every intrastate pipeline used for the
20 transportation of hazardous liquid substances, carbon dioxide, or
21 highly volatile liquid substances, including a common carrier
22 pipeline, and all piping containing those substances located within
23 a refined products bulk loading facility that is owned by a common
24 carrier and is served by a pipeline of that common carrier, and the
25 common carrier owns and serves by pipeline at least five of these
26 facilities in the state. “Pipeline” does not include the following:

27 (1) An interstate pipeline subject to Part 195 of Title 49 of the
28 Code of Federal Regulations.

29 (2) A pipeline for the transportation of a hazardous liquid
30 substance in a gaseous state.

31 (3) A pipeline for the transportation of crude oil that operates
32 by gravity or at a stress level of 20 percent or less of the specified
33 minimum yield strength of the pipe.

34 (4) Transportation of petroleum in onshore gathering lines
35 located in rural areas.

36 (5) A pipeline for the transportation of a hazardous liquid
37 substance offshore located upstream from the outlet flange of each
38 facility on the Outer Continental Shelf where hydrocarbons are
39 produced or where produced hydrocarbons are first separated,

1 dehydrated, or otherwise processed, whichever facility is farther
2 downstream.

3 (6) Transportation of a hazardous liquid by a flow line.

4 (7) A pipeline for the transportation of a hazardous liquid
5 substance through an onshore production, refining, or
6 manufacturing facility, including a storage or inplant piping system
7 associated with that facility.

8 (8) Transportation of a hazardous liquid substance by vessel,
9 aircraft, tank truck, tank car, or other vehicle or terminal facilities
10 used exclusively to transfer hazardous liquids between those modes
11 of transportation.

12 (b) “Flow line” means a pipeline that transports hazardous liquid
13 substances from the wellhead to a treating facility or production
14 storage facility.

15 (c) “Hydrostatic testing” means the application of internal
16 pressure above the normal or maximum operating pressure to a
17 segment of pipeline, under no-flow conditions for a fixed period
18 of time, utilizing a liquid test medium.

19 (d) “Local agency” means a city, county, or fire protection
20 district.

21 (e) “Rural area” means a location that lies outside the limits of
22 any incorporated or unincorporated city or city and county, or other
23 residential or commercial area, such as a subdivision, a business,
24 a shopping center, or a community development.

25 (f) “Gathering line” means a pipeline eight inches or less in
26 nominal diameter that transports petroleum from a production
27 facility.

28 (g) “Production facility” means piping or equipment used in the
29 production, extraction, recovery, lifting, stabilization, separation,
30 or treatment of petroleum or associated storage or measurement.
31 (To be a production facility under this definition, piping or
32 equipment must be used in the process of extracting petroleum
33 from the ground and transporting it by pipeline.)

34 (h) “Public drinking water well” means a wellhead that provides
35 drinking water to a public water system as defined in Section
36 116275 of the Health and Safety Code, that is regulated by the
37 State Department of Public Health and that is subject to Section
38 116455 of the Health and Safety Code.

39 (i) “GIS mapping system” means a geographical information
40 system that will collect, store, retrieve, analyze, and display

1 environmental geographical data in a database that is accessible
2 to the public.

3 (j) “Motor vehicle fuel” includes gasoline, natural gasoline,
4 blends of gasoline and alcohol, or gasoline and oxygenates, and
5 any inflammable liquid, by whatever name the liquid may be
6 known or sold, which is used or is usable for propelling motor
7 vehicles operated by the explosion type engine. It does not include
8 kerosene, liquefied petroleum gas, or natural gas in liquid or
9 gaseous form.

10 (k) “Oxygenate” means an organic compound containing oxygen
11 that has been approved by the United States Environmental
12 Protection Agency as a gasoline additive to meet the requirements
13 for an “oxygenated fuel” pursuant to Section 7545 of Title 42 of
14 the United States Code.

15 (l) “Carbon dioxide” means a fluid consisting of more than 90
16 percent carbon dioxide molecules.

17 SEC. 5. Section 38572 is added to the Health and Safety Code,
18 to read:

19 38572. (a) On or before January 1, 2016, the state board shall
20 adopt a final quantification methodology for carbon capture and
21 storage projects seeking to demonstrate geologic sequestration.

22 (b) The methodology adopted pursuant to subdivision (a) shall
23 be used for the quantification of emissions as part of compliance
24 obligations under any of the following:

25 (1) The mandatory reporting requirements adopted pursuant to
26 Section 38530.

27 (2) The demonstration of sequestration for the purposes of any
28 regulation implementing a market-based compliance mechanism
29 pursuant to this part.

30 (3) The demonstration of sequestration under the greenhouse
31 gas-emission ~~emissions~~ performance standard established pursuant
32 to Chapter 3 (commencing with Section 8340) of Division 4.1 of
33 the Public Utilities Code.

34 (c) The state board shall consult with the Public Utilities
35 Commission and the State Energy Resources Conservation and
36 Development Commission on the development of the quantification
37 methodology, and, to the maximum extent possible, coordinate
38 the incorporation of the methodology into the emissions
39 performance standard enforcement processes of those commissions.

(d) The quantification methodology shall include a methodology for carbon dioxide enhanced oil recovery projects seeking to demonstrate simultaneous sequestration of injected carbon dioxide. The methodology shall address multiple modes of carbon dioxide transportation, including pipeline, rail, and road transportation. The methodology shall do all of the following:

(1) Ensure that greenhouse gas ~~emission~~ *emissions* reductions, achieved pursuant to the methodology, are real, permanent, quantifiable, verifiable, and enforceable by the state board.

(2) Demonstrate that sites are capable of long-term containment of carbon dioxide.

(3) Identify and characterize potential natural and manmade leakage pathways, and provide implementation of appropriate risk management and corrective actions.

(4) Provide design, construction, and operation parameters to prevent, mitigate, and remediate the creation or activation of leakage pathways and the migration of carbon dioxide or fluids into any zone in a manner not authorized by the methodology.

(5) Minimize fugitive carbon dioxide emissions from carbon dioxide enhanced oil recovery projects seeking to demonstrate simultaneous sequestration of injected carbon dioxide.

(6) Provide for post injection closure and the long-term responsibility for carbon dioxide sequestered.

(7) Verify, monitor, account for, and report carbon dioxide quantities sequestered, injected, recycled, leaked, vented, and in any other categories as deemed appropriate by the state board.

(e) The state board shall not quantify any carbon dioxide from an enhanced oil recovery project seeking to demonstrate simultaneous sequestration of injected carbon dioxide that is incapable of transitioning to class VI in accordance with applicable requirements of the federal Safe Drinking Water Act (42 U.S.C. Sec. 300f et seq.).

(f) Utilizing existing requirements under federal and state law to the extent possible, the methodology may include surface and subsurface characterization, monitoring, operational, reporting, accounting, and verification requirements and conditions to ensure the accurate quantification of emissions.

(g) In adopting the methodology, the state board shall, to the maximum extent feasible, harmonize the adopted methodology with greenhouse gas storage or sequestration quantification

1 methodologies used by other state, federal, or international
2 greenhouse gas ~~emission~~ *emissions* reduction programs if it does
3 not compromise the ability of the methodology to verify
4 sequestration or accurately quantify emissions.

5 (h) This section does not modify, limit, or supersede the
6 operation of other laws applicable to carbon dioxide capture,
7 transportation, or underground injection, or their application by
8 the State Energy Resources Conservation and Development
9 Commission, the Public Utilities Commission, the Division of Oil,
10 Gas, and Geothermal Resources, or the California Environmental
11 Protection Agency and its boards, offices, and departments.

12 (i) In adopting the methodology, the state board shall consider
13 the potential for direct, indirect, and cumulative emission impacts
14 that may result from carbon capture and storage projects seeking
15 to demonstrate geologic sequestration.

16 SEC. 6. Section 3239 is added to the Public Resources Code,
17 to read:

18 3239. (a) Upon the final adoption of a quantification
19 methodology for carbon capture and storage projects seeking to
20 demonstrate geologic sequestration of carbon greenhouse gases
21 by the State Air Resources Board pursuant to Section 38572 of
22 the Health and Safety Code, the division shall, under its regulatory
23 authority to permit class II injection wells in the state pursuant to
24 the authority delegated to the division pursuant to Section 1425
25 of the federal Safe Drinking Water Act (42 U.S.C. Sec. 300h-4),
26 and pursuant to Section 38572 of the Health and Safety Code,
27 regulate the injection of carbon dioxide at an enhanced oil recovery
28 project seeking to demonstrate simultaneous geologic sequestration
29 of greenhouse gases pursuant to the greenhouse gas ~~emission~~
30 *emissions* performance standard under Chapter 3 (commencing
31 with Section 8340) of Division 4.1 of the Public Utilities Code,
32 under the mandatory reporting of greenhouse gas emissions
33 pursuant to Article 2 (commencing with Section 95100) of
34 Subchapter 10 of Chapter 1 of Division 3 of Title 7 of the
35 California Code of Regulations, or for any regulation implementing
36 a cap-and-trade program or other market-based compliance
37 mechanism that may be adopted pursuant to the California Global
38 Warming Solutions Act of 2006 (Division 25.5 (commencing with
39 Section 38500) of the Health and Safety Code).

(b) Pursuant to subdivision (a), the division and the State Air Resources Board shall execute an agreement using a coordinated and comprehensive regulatory approach, including oversight and short-term and long-term monitoring requirements and verification, for geologic sequestration of greenhouse gases during and following enhanced oil recovery operations.

(c) In developing the regulations pursuant to subdivision (a), the division shall consider, at a minimum, both of the following:

(1) Whether long-term successful geologic sequestration may require adherence to standards and methods exceeding existing enhanced oil recovery and underground injection control practices and regulations.

(2) Whether all hydrocarbon reservoirs, given the diversity of California's geology, well treatment, and production practices, may not be suitable for long-term successful geologic sequestration.

(d) This section does not modify, limit, or supersede any other law applicable to carbon dioxide capture, transportation, or underground injection, or its application by the State Energy Resources Conservation and Development Commission, the Public Utilities Commission, the division, or the California Environmental Protection Agency, and its boards, offices, and departments.

SEC. 7. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to facilitate the sequestration of greenhouse gases as quickly as possible, it is necessary that this act take effect immediately.